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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,483	03/31/2001	Calvin Selig	10011973-1	5733

7590 07/01/2003
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
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EXAMINER

NGUYEN, KIMBINH T

ART UNIT PAPER NUMBER

2671

DATE MAILED: 07/01/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,483

Applicant(s)

SELIG ET AL.

Examiner

Kimbinh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-29 are pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-17, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Murphy (5,805,868).

Claim 1, Murphy teaches a method of performing clear operation in a region having a subregion (col. 59, lines 53-58), comprising: responsive to a clear command (abstract, lines 8-10; col. 59, lines 60-62); leaving a current clear count for the region unchanged (the frame count is found to be the same as the reference frame count, col. 55, lines 31-33; col. 59, lines 4-6); writing a predetermined value into pixels of the subregion (the data stored at the given pixel address is read, col. 59, lines 6-7), but not into the pixels outside the subregion (col. 59, lines 10-16); writing the current clear count into clear count storage locations corresponding to pixels of subregion, but not into clear count storage locations corresponding to the pixels outside the subregion (clearing at least some other portions of the respective data values; and not clearing the data values of at least some other pixels; see col. 59, lines 15-17).

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Claims 2-7, Murphy teaches the subregion is a scissor region (col. 9, lines 52-61; col. 44, lines 55-59); the subregion is a viewport (the screen or window is divided up into n regions where n is the range of the frame counter, see col. 4, lines 29-30; different subregions of the local buffer corresponding to different respective frame count values, see col. 59, lines 57-60; the predetermined value is a color value (col. 58, lines 36-38); the color value (frame count value) is the same as a background color outside the subregion (the frame count value is the same as the reference count we know the data held in the depth field (background); the color value (frame count value) is different than a background color outside the subregion (frame count value is different from the reference count value, we know the data held in the depth field (or background) is stale and replaced by local data. This will happen for the first read of a pixel outside of the current region, outside the subregion, see col. 4, line 63 through col. 5, line 3); the predetermined value is a z value (depth value, col. 3, lines 22-32).

Claim 8, the rationale provided in the rejection of claim 1 is incorporated herein. In addition, Murphy teaches prior to creation of the subregion, responding to clear commands for the region according to a fast clear technique (a very fast clear operation is performed without the need to address each pixel, and without using memories which include a hardware fast-clear capability, see abstract, lines 1-4); after creation of the subregion and during the life of the subregion, responding to clear commands (abstract, lines 4-12); after discontinuance of the subregion, resuming responding to clear commands for the region according to the fast clear technique (when the frame count is

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found to be different from the reference frame count, then the fast clear mechanism can be used, see col. 56, lines 39-46).

Claims 9-11, Murphy teaches the resuming step occurs without changing the current clear count for the region (when the local buffer is subsequently read and the frame count is found to be the same as the reference frame count, the local buffer data is used directly, see col. 55, lines 31-33); fast clear technique is a striped fast clear technique (for local buffer coordinates, col. 26, lines 47-56); the resuming step (for frame buffer coordinates) occurs without changing stripe definition for the region (col. 28, lines 19-31).

Claims 12-17, the rationale provided in the rejection of claims 2-7 is incorporated herein.

Claims 27 and 28, the rationale provided in the rejection of claims 1 and 8 is incorporated herein. In addition, Murphy teaches computer program code (col. 20, lines 13-34) embodied in a machine-readable storage (VRAM and DRAM, col. 4 line 13), causing the computer to perform clear operation.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 18-26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murphy (5,805,868).

Claims 18-20, the rationale provided in the rejection of claim 1 is incorporated herein. In addition, Murphy does not teach the percentage area of the region occupied by the subregion; however, Murphy teaches the window or the area comprising S pixel, is divided up into n regions, where n is the range of the frame counter. Every time the application issues a clear command the reference frame count is incremented (and allowed to roll over if it exceeds its maximum value or threshold, and only the ith region is cleared (col. 55, lines 10-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the subdivision regions taught by the Murphy's teaching for determining percentage of the subregion in the region, because by dividing the region, this region is much smaller than the full window and hence takes less time to clear (col. 25, lines 32-33). Murphy also teaches the predetermined threshold percentage (the alpha component of a fragment represents the percentage pixel coverage, col. 48, lines 12-13) is about 70%, about 75% (its range is 0% to 100%, col. 47, lines 62-63).

Claims 21-26, the rationale provided in the rejection of claims 2-7 is incorporated herein.

Claim 29, the rationale provided in the rejection of claim 18 is incorporated herein. In addition, Murphy teaches computer program code (col. 20, lines 13-34) embodied in a machine-readable storage (VRAM and DRAM, col. 4 lines 13), causing the computer to perform clear operation.

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Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hannah (5,038,297) discloses method and apparatus for clearing a region of z-buffer.
- Drews (5,841,447) discloses system and method for improving pixel update performance.
- Martin (5,748,864) discloses video buffer recycling method and apparatus.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kimbinh Nguyen** whose telephone number is **(703) 305-9683**. The examiner can normally be reached **(Monday- Thursday from 7:00 AM to 4:30 PM and alternate Fridays from 7:00 AM to 3:30 PM)**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

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Hand-delivered responses should be brought to Crystal Part II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the Technology Center 2600 Customer Service Office
whose telephone number is (703) 306-0377.

June 27, 2003



Kimbinh Nguyen

Patent Examiner AU 2671